AMENDMENTS TO THE CLAIMS:

Please cancel Claims 9 and 10. Please amend Claim 1 as follows:

1. (Currently Amended) An image pickup apparatus comprising:

an image pickup unit having an array of a plurality of photodetection elements;

a light-emitting element unit for emitting reference light having a predetermined frequency ~~difference with respect to a frequency of light comprising an optical image of an object, wherein said reference light is unrelated to said image light~~; ~~and~~

a wave synthesizer for synthesizing incident light from ~~said~~ an optical image and the reference light from said light-emitting element unit, and for guiding the synthesized light to said image pickup unit~~.~~; and

a filter for extracting a difference between a frequency of light comprising an optical image of an object and said frequency of the reference light, from outputs of said plurality of photodetection elements of said image pickup unit,

wherein said light-emitting element unit changes said predetermined frequency of the reference light in accordance with said difference extracted by said filter.

2. (Original) An apparatus according to claim 1, wherein the predetermined frequency difference is 0.

3. (Original) An apparatus according to claim 1, wherein the predetermined frequency difference is constant.

4. (Original) An apparatus according to claim 1, wherein the predetermined frequency difference is modulated according to a predetermined rule.

5. (Original) An apparatus according to claim 1, wherein said light-emitting element unit is provided in common to each of the photodetection elements.

6. (Original) An apparatus according to claim 1, wherein said light-emitting unit includes a semiconductor laser.

7. (Original) An apparatus according to claim 1, further comprising a microlens array provided for each of the photodetection elements.

8. (Original) An apparatus according to claim 1, wherein said wave synthesizer comprises a light waveguide provided for each of the photodetection elements.

9. (Cancelled)

10. (Cancelled)

11. (Original) An apparatus according to claim 1, further comprising an optical system for focusing light on said image pickup unit, and a signal processing circuit for processing an output signal from said image pickup unit.

12. (Previously Amended) An apparatus according to claim 1, wherein said apparatus includes a plurality of more than two of said image pickup units for use in obtaining a combined image.